

In the claims:

For the Examiner's convenience, all pending claims are presented below with changes shown. Please cancel claims 21 and 25 without prejudice.

1. (Cancelled)
2. (Currently Amended) An apparatus for handling multiple priorities for a multicast packet being output from a network element on at least two output ports comprising:

at least a first output queue and a second output queue, the first output queue having a priority higher than the second output queue, at each output port;

a memory ~~configured~~ to output forwarding information about the multicast packet in response to a memory access based in part on a multicast address of the multicast packet, the forwarding information including priority information indicating to which output queue at each output port the multicast packet will be directed;

a central processing unit (CPU) coupled to the memory; and

a computer program mechanism coupled to the CPU ~~and configured~~ to modify the priority information if a flow associated with the multicast packet misbehaves.
3. (Previously Presented) The apparatus of claim 2, wherein the computer program mechanism modifies the priority information based on an amount of packets being transmitted through one of the output ports.
4. (Previously Presented) The apparatus of claim 2, wherein the computer program mechanism modifies the priority information based on information communicated between the network element and an intended recipient of the multicast packet.

5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Currently Amended) An apparatus in a network element that is adapted to transmit a packet to multiple recipients and includes services for reservation-based protocols for handling multiple priorities, the apparatus comprising:
 - at least two output ports, one associated with each of the multiple recipients, each of the output ports having at least a first output queue and at least a second output queue, the first output queue having a priority higher than the second output queue, at each port;
 - a memory configured to output forwarding information about the packet in response to a memory access based in part on a header of the packet, the forwarding information including priority information indicating to which output queue at each output port the packet will be directed;
 - a central processing unit (CPU) coupled to the memory; and
 - a computer program mechanism coupled to the CPU and configured to modify the priority information if a flow associated with the multicast packet exceeds one or more negotiated values associated with the reservation-based protocol.
9. (Previously Presented) The apparatus of claim 8, wherein the computer program mechanism modifies the priority information based on the amount of packets being transmitted through one of the output ports.
10. (Previously Presented) The apparatus of claim 8, wherein the computer program mechanism modifies the priority information based on reservation-based

protocol information communicated between the network element and an intended recipient of the multicast packet.

11. (Previously Presented) An apparatus of claim 4, wherein the priority information is based on reservation-based protocol information communicated between the network element and an intended recipient of the multicast packet.
12. (Previously Presented) An apparatus of claim 8, wherein the header of the packet comprises encapsulation information.
13. (Previously Presented) An apparatus of claim 8, wherein the header of the packet comprises layer 3 class information.
14. (Previously Presented) An apparatus of claim 2, wherein the priority information associated with the multicast packet is predetermined information for the flow associated with the multicast packet.
15. (Previously Presented) An apparatus of claim 2, wherein the priority information associated with the multicast packet is obtained from the multicast packet.
16. (Previously Presented) An apparatus of claim 8, wherein the priority information associated with the multicast packet is predetermined information for the flow associated with the multicast packet.
17. (Previously Presented) An apparatus of claim 8, wherein the priority information associated with the multicast packet is obtained from the multicast packet.
18. (Currently Amended) An apparatus for handling multiple priorities for a multicast packet being output from a network element on at least two output ports, each of the output ports comprising:

a plurality of output queues at each output port, each output queue having a unique priority;

a memory ~~configured~~ to output priority information associated with the multicast packet indicating to which output queue at each output port the multicast packet will be directed;

a central processing unit coupled to the memory; and

a computer program mechanism coupled to the central processing unit and ~~configured~~ to override the priority information if the flow associated with the multicast packet sends multicast packets in excess of one or more negotiated parameters by directing the multicast packet to the lowest priority queue associated with the output port of the misbehaving flow.

19. (Previously Presented) An apparatus of claim 18, wherein the priority information associated with the multicast packet is predetermined information for the flow associated with the multicast packet.
20. (Previously Presented) An apparatus of claim 18, wherein the priority information associated with the multicast packet is obtained from the multicast packet.
21. (Cancelled)
22. (Currently Amended) A method for handling multiple priorities for a multicast packet being output from a network element on at least two output ports, comprising:

directing the multicast packet to one of a plurality of output queues associated with an output port as determined by priority information associated with the multicast packet, the output queues each having unique priority levels;

overriding the priority information associated with the multicast packet if a flow associated with the multicast packet is detected to be misbehaving by lowering the priority information of the multicast packet, the lowering comprising directing the multicast packet to the lowest priority queue associated with the output port of the misbehaving flow.

23. (Previously Presented) A method of claim 22, wherein the priority information associated with the multicast packet is predetermined information for the flow associated with the multicast packet.
24. (Previously Presented) A method of claim 22, wherein the priority information associated with the multicast packet is obtained from the multicast packet.
25. (Cancelled)
26. (Previously Presented) A method of claim 22, wherein the flow misbehaves if it sends packets in excess of one or more negotiated parameters.
27. (Previously Presented) An apparatus as in claim 2, wherein the computer program mechanism modifies the priority information by lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow misbehaves.
28. (Previously Presented) An apparatus as in claim 8, wherein the computer program mechanism modifies the priority information by lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow exceeds one or more negotiated values of the reservation-based protocol.
29. (Currently Amended) ~~An apparatus as in claim 18, wherein the computer program mechanism overrides the priority information by lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow sends multicast packet in excess of one or more negotiated parameters.~~

An apparatus for handling multiple priorities for a multicast packet being output from a network element on at least two output ports, each of the output ports comprising:

a plurality of output queues at each output port, each output queue having a unique priority;

a memory to output priority information associated with the multicast packet indicating to which output queue at each output port the multicast packet will be directed;

a central processing unit coupled to the memory; and

a computer program mechanism coupled to the central processing unit to override the priority information if the flow associated with the multicast packet sends multicast packets in excess of one or more negotiated parameters by lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow sends multicast packet in excess of one or more negotiated parameters.

30. (Previously Presented) ~~A method as in claim 22, wherein the overriding the priority information associated with the multicast packet comprises lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow misbehaves.~~

A method for handling multiple priorities for a multicast packet being output from a network element on at least two output ports, comprising:

directing the multicast packet to one of a plurality of output queues associated with an output port as determined by priority information associated with the multicast packet, the output queues each having unique priority levels;

overriding the priority information associated with the multicast packet if a flow associated with the multicast packet is detected to be misbehaving, the overriding comprising lowering the priority information of the multicast packet, the lowering comprising lowering the priority of the flow associated with the multicast packet if the flow misbehaves.